

Testing for Market Misunderstanding of Risk Pre-Crisis

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One theory that we discuss at length in the paper is that beta and volatility were low in the pre-crisis period because the market failed to understand the risks banks faced in the pre-crisis period. If this is the case, you suggested that we would expect to see positive serial correlation in the pre-crisis period (because information would take time to seep down). Another implication of this market misunderstanding story would be that we would anticipate that analyst forecasts would be more accurate in the post-crisis period.

We can test this theory directly by looking at analyst forecasts and their reliability in the pre- and post-crisis period. Specifically, if “market misunderstanding” has bite, we would expect that earnings deviations from forecasts would decline in the post-crisis period, now that the market has a better understanding of risk and betas and volatility are no longer suppressed.

We test this theory below using data from Thompson Reuters Institutional Brokers’ Estimate System (I/B/E/S). We pull all quarterly analyst forecast for our largest US banks (the “Big 6” and the top-50) made from 2002 to present. We then measure average deviation from actual earnings by looking at the difference between actual earnings and the average of all analyst forecasts for that quarter. We scale this difference in two ways:

(1) by taking the ratio of $\frac{earnings - \bar{predict}}{earnings + \bar{predict}}$

(2) by the average deviation from actual earnings ($earnings - \bar{predict}$) scaled by price on the day earnings are announced, for a pseudo earnings/price ratio and following Khan, Rozenbaum, and Sadka (2013).

We then do a basic t-test to see if the pre-crisis deviations differ from the post-crisis deviations in a statistically significant way. We find that they do, but our findings do not support the market misunderstanding of risk as the explanation for these differences. We find that (1) deviations are larger (in absolute value) in the post-crisis period (defined as 2010-2015) relative to the pre-crisis period (2002-2007) and (2) that the sign of the deviations switches; specifically that analysts are on average overly optimistic in the post-crisis period and overly pessimistic in the pre-crisis period.

	Pre-crisis	Post-crisis
Deviation from EPS	-0.0083 (0.1849)	0.0404*** (0.4739)
Absolute Value of Deviation from EPS	0.0517 (0.1777)	0.1193*** (0.4605)
Deviation from Earnings Price Ratio	-0.0001 (0.0049)	0.0007*** (0.0065)
Absolute Value of Deviation from Earnings Price Ratio	0.0015 (0.0047)	0.0028*** (0.0059)

Asterics denote significance for t-test for difference in means.

Another possible test, which we’ve yet to implement here but can do in the next pass, is to look at the effect of earnings announcements in the pre- and post-crisis period. The effect of earnings announcements

can be decomposed into (1) the day-of effect and (2) the post-earnings announcement drift (PEAD). The PEAD component would capture the serial correlation story you've discussed and we should see more drift in the period when market understanding is poorer. As for the day-of effect, if banks were more poorly understood before the crisis, perhaps the information contained in earnings announcements would be more valuable and thus have a stronger effect on the stock price on the announcement.